

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number  
**WO 2005/003170 A2**

(51) International Patent Classification<sup>7</sup>: C07K 16/00

(21) International Application Number:  
PCT/GB2004/002870

(22) International Filing Date: 1 July 2004 (01.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0315450.7 1 July 2003 (01.07.2003) GB

(71) Applicant (for all designated States except US): CELL-  
TECH R & D LIMITED [GB/GB]; 208 Bath Road,  
Slough, Berkshire SL1 3WE (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): HUMPHREYS,  
David, Paul [GB/GB]; Celltech R & D Limited, 208 Bath  
Road, Slough, Berkshire SL1 3WE (GB). HEYWOOD,  
Sam, Philip [GB/GB]; Celltech R & D Limited, 208 Bath  
Road, Slough, Berkshire SL1 3WE (GB). CARRING-  
TON, Bruce [GB/GB]; Celltech R & D Limited, 208 Bath  
Road, Slough, Berkshire SL1 3WE (GB).

(74) Agent: THOMPSON, John; Celltech R & D Limited, 208  
Bath Road, Slough, Berkshire SL1 3WE (GB).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KB,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

**Published:**

— without international search report and to be republished  
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: MODIFIED ANTIBODY FRAGMENTS

(57) Abstract: The present invention provides an antibody Fab or Fab' fragment to which at least one effector molecule is attached characterized in that the heavy chain in the fragment is not covalently bonded to the light chain and both the interchain cysteine of C<sub>L</sub> and the interchain cysteine of C<sub>H</sub>1 have been replaced with another amino acid.



WO 2005/003170 A2